

VELIKANOVA, T. I. Cand Geog. Sci -- (diss) "Spring-time flow of rivers in the
Northern region ^{the} ^(part of the) ~~Soviet~~ of European USSR and methods of forecasting it." Mos, 1956. 7 pp 19 cm.

(Main Administration of the Hydrometeorological Service under the Council of

Ministers USSR. Central Inst of Forecasts), 100 copies

(KL, 7-57, 105)

16

VELIKANOVA, T. I.

Forecasting of Spring Floods on the Vychegda River Near Syktyvkar

The author gives a computational scheme for predicting floods with accuracy of prediction (vlagovremennost') up to 10-30 days at drop and up to 5-8 days for a peak. The intensity of snow thaw is computed from a relation between quantity of standing snow and total positive mean daily temperature (for forest one takes 2 mm/degree; and for field, 6 mm/degree). Liquid precipitation is also taken into account. The loss is computed graphically according to relations between volume of surface runoff and reserve of water in snow and spring precipitation. The accuracy of forecasting of the height of the peak flood testified to by the fact that the peak sets in 5-8 days later than the descent of the main mass of snow. (RZhGeol, No. 4, 1955) Tr. Tsentr. ir-ta prognozov. No. 30, 1953, 91-99.

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

~~VNLIKANOVA, T.I.~~

Forecasting spring flood of the river Vychegda at Syktyvkar. Tridy
TSIP no.30:91-99 '53. (MIRA 11:0)
(Vychegda River--Floods)

14-57-6-12271D

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6,
p 81 (USSR)

AUTHOR: Velikanova, T. I.

TITLE: Spring Flow in the Rivers on the Northern Periphery
of the European USSR and the Method of Forecasting
This Flow (Vesenniy stok rek Severnogo kraya Yevro-
peyskoy chasti SSSR i metodika yego prognoza)

ABSTRACT: Bibliographic entry on the author's dissertation for
the degree of Candidate of Geographical Sciences,
presented to Tsentr. in-t prognozov (Central Fore-
casting Institute), Moscow, 1956

ASSOCIATION: Tsentr. in-t prognozov (Central Forecasting Institute)

Card 1/1

VELIXANOVA, T.I.

Losses of spring runoff in northern European U.S.S.R. Meteor.
i gidrol. no.1:19-25 Ja '57. (MIRA 10:3)
(Runoff)

VELIKANOVA, T.I.

"Forecasting of the Spring High Waters on the Vychegda River Near Syktyvkar."

SO: "Problems of Hydrological Weather Forecasts." No 30(57), 1953, page 91.

KASHIRSKIY, Arkadiy Anatol'yevich; BIRIN, Yuliy Nikolayevich;
VELIKANOVA, T.M., nauchn. red.; BOGINA, S.L., red.izd-va;
TARKHOVA, K.Ye., tekhn. red.

[Use computing equipment in construction] Vychislitel'mu
tekhniku - na sluzhbu stroitel'stva. Moskva, Gosstroizdat,
1963. 100 p. (MIRA 16:12)
(Electronic data processing--Construction industry)

VELIKANOVA, T.M.

BR

PHASE I BOOK EXPLOITATION

SOV/5962

Vsesoyuznoye soveshchaniye po vychislitel'noy matematike i primeneniyu sredstv vychislitel'noy tekhniki, Baku, 1958.

Trudy (Transactions of the All-Union Conference on Computer Mathematics and Applications of Computers) Baku, Izd-vo AN Azerbaydzhanskoy SSR, 1961. 254 p. 500 copies printed.

Sponsoring Agency: Akademiya nauk Azerbaydzhanskoy SSR. Vychislitel'nyy tsentr.

Eds.: A.A. Dorodnitsyn, S.A. Alekperov, and K.F. Shirinov; Ed. of Publishing House: A. Til'man; Tech. Ed.: T. Ismailov.

PURPOSE: The book is intended for mathematicians and other specialists interested in computer theory and uses for computers.

COVERAGE: The book contains the texts of 24 papers presented at the All-Union Conference on Computer Mathematics and Applications of Computers held in Baku, 3-8 Feb 1958. The "Resolution"

Card 1/3

Transactions of the All-Union (Cont.)

SCV/5962

of the conference, consisting of proposals for accelerating the development of computer mathematics and computer engineering, is also included.

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Card 2/0

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Card 3/6

S/044/62/000/006/115/127
B162/B102

/6.6800

AUTHORS: Velikanova, T. M., Yershov, A. P., Kim, K. V., Kurochkin,
V. M., Oleynik-Ovod, Yu. A., Podderyugin, V. D.

TITLE: Programming program for a computer

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 70, abstract
6V376 (Tr. Vses. soveshchaniya po vychisl. matem. i
primeneniyu sredstv vychisl. tekhn. Baku. AN AzerbSSR, 1961,
. 81 - 93).

TEXT: A programming program (PP) is described for the computer C-3 (S-3).
The information which the programmer prepares for the PP consists of five
parts: (1) scheme of the program, (2) removed operators, (3) information
on quantities, (4) information on memory arrays, (5) arrays. The scheme
of the program may include arithmetical and logical operators, recovery
operators, non-standard operators, re-address operators and binary
counting operators. In the scheme of the program the necessity of a
cyclic repetition of a certain group of operators may be indicated, for
which this group is enclosed in brackets. Under the opening bracket of the
cycle, the parameter of the cycle and its initial value, if it differs
Card 1/2

VB

Programming program for a computer

S/044/62/000/006/115/127
B162/B102

from zero, are indicated. If the number of repetitions of the cycle is determined by a finite value of the parameter, then the latter is placed under the opening bracket. A description is given of a method used in the PP of recording the occupied cells of the memory. An occupancy table is drawn up in which each place corresponds to a given cell and contains a 1 if the cell is free. The number of the free cell is determined from the modulus of the order of the number obtained by normalizing the line of the table differing from zero. An example of information for the PP is given. [Abstracter's note: Complete translation.]

Card 2/2

32903
S/194/61/000/011/016/070
D209/D302

9,7100
AUTHORS:

Velikanova, T.M., Yershov, A.P., Kim, K.V., Kuroch-
kin, V.M., Oleynik-Ovod, Yu.A. and Podderyugin, V.D.

TITLE:

Programming program for machines

PERIODICAL:

Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 11, 1961, 3, abstract 11 B14 (Tr. Vses. sovesh-
chaniya po vychisl. matem i primeneniyu sredstv
vychisl. tekhn., Baku, AN AzerbSSR, 1961, 81-93)

TEXT:

It is shown that in 1957 in the Computing Center of
the Academy of Sciences of the USSR, work on forming the system pro-
gramming program (SPP) was completed. By using SPP the need for
formulating programs of actual problems is avoided and this process
is replaced by the process of compiling the information for SPP con-
cerning the problem being solved. In working out the method of pro-
viding information about the problem for SPP the following points
were observed: a) If possible, to provide the best approximation of

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D209/D302

Programming program for machines

the information to mathematical formulation of problems (i.e. to calculated formulae); b) reduction of the volume of auxiliary and purely technical work connected, as a rule, with the mathematical formulation of the problem and with the specific character of work on universal computing machines; c) that from the information one could see more or less accurately the structure of the completed program; d) reduction of volume of total information in order to make it more descriptive and easily surveyed. The information for SPP consists of five parts: 1) Program scheme - basic part of the information; 2) operators (O); 3) information about magnitudes; 4) information about memory blocks; 5) blocks. Except for the program scheme all the remaining parts of the information do not have to be given in an actual problem. The whole terminology used in this paper is explained. The program scheme is given. It is shown that the scheme can include O's of the following types: 1) Arithmetical O's; 2) restoration O's; 3) non-standard O's; 4) re-addressing O's; 5) double counting O's. Each operator in the scheme is represented by a letter giving the type of the O followed by the

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Programming program for machines

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information about the given 0. The arithmetical 0's and certain non-standard 0's of special form are the exceptions. The popularity of the program scheme, the nearness of its form to the form of the mathematical formulation of the problem are obtained basically by a specific solution of the registration of mathematical formulae in arithmetical 0 and preservation in the program scheme. Examined in detail is an arithmetical 0 which realizes a single calculation to a certain sequence of formulas of the type $F(x_1, x_2, \dots, x_n) = > y$, where the symbol - ">" indicates that y is a result of calculation according to the formula F. Further on, logical 0's non-standard 0's, cycles, re-addressing 0's, restoration 0's and double counting 0's are examined. Finally, an example of integration of a parabolic equation of the type

$$\frac{\partial z}{\partial t} = 0.75 \sqrt{x(1-x)(t^2 + 2)} \frac{\partial^2 z}{\partial x^2},$$

$$z(x, 0) = 0; \quad z(0, t) = 0; \quad z(1, t) = t$$

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Programming program for machines

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up to the moment when $t = T$ is given. One of the possible calculated formulas is shown. Information is provided about the block and the program scheme. [Abstracter's note: Complete translation]

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Card 4/4

V. L. KANOVA, T. M.

18(2)

PHASE I BOOK EXPLOITATION

NOV/1965

Abkhazian Academy of Sciences USSR

Tetis doklady Sovetskoye po vychislitel'noy matematike i primeneniya sredstv vychislitel'noy tekhniki (Outlines of Reports of the Conference On Computational Mathematics and the Use of Computer Techniques) Baku, 1965. 65 p. 400 copies printed.

Additional Sponsoring Agencies: Abkhazian Academy of Sciences, Vychislitel'nyy tsentr, and Abkhazian Academy of Sciences. Institut avtomatizatsii i telemekhaniki.

No contributors mentioned.

PURPOSE: This book is intended for pure and applied mathematicians, scientists, engineers and scientific workers, whose work involves computation and the use of digital and analog electronic computers.

COVERAGE: This book contains summaries of reports made at the Conference on Computational Mathematics and the Application of Computer Techniques. The book is divided into two main parts. The first part is devoted to computational mathematics and contains 19 summaries of reports. The second section is devoted to computing techniques and contains 20 summaries of reports. No personalities are mentioned. No references are given.

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Card 3/

VELIKANOVA, T.M.; ANTIPOV, I.N.; CHIBISOV, V.V., otv. red.

[Work at the control desk of the BESM-2 computer; programmer's handbook.] Rabota za pul'tom BESM-2; posobie dlia programmistov. Moskva, 1965. 31 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Standartnye i tipovye programmy BESM-2, no.10) (MIRA 18:8)

KONDAREVA, T.N.; BARKOVSKIY, V.P.; VELIKANOVA, T.V.

Complex compounds of tetravalent cerium with sulfate ions.
Zhur. neorg. khim. 10 no.1:127-131 1965. (MIRA 18:11)

1. Ural'skiy gosudarstvennyy universitet imeni Ger'kogo.
Submitted July 10, 1965.

YEREMENKO, V.N.; TOLMACHEVA, Z.I.; VELIKANOVA, T.Ya.

Structure of titanium carbide alloys with nickel, chromium,
and molybdenum. Issl.po zharopr.splav. 8:95-102 '62.
(MIRA 16:6)

(Powder metallurgy) (Phase rule and equilibrium)

YEREMENKO, V.N.; VELIKANOVA, T.Ya.

Investigation of the tin - titanium system in the tin rich region.
Zhur.neorg.khim. 7 no.7:1750-1752 J1 '62. (MIRA 16,3)
(Tin-titanium alloys)

L 31873-66 EWT(m)/ETC(f)/T/FWP(t)/ETI IJP(c) WH/GD/JG/JD
ACC NR: AT6013564 (A) SOURCE CODE: UR/0000/65/000/000/0265/0273

44
43
BT/

AUTHOR: Yeremenko, V. N.; Velikanova, T. Ya.

ORG: Institute of Material Science Problems, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Interaction between molybdenum²¹ and titanium carbide²¹

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soyedineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 265-273

TOPIC TAGS: carbide, molybdenum compound, molybdenum, nonferrous metal, titanium, titanium compound

ABSTRACT: Interaction between molybdenum and titanium carbide in the 1.2-90 mol % TiC range was investigated by x-ray and metallographic techniques. Samples of Mo-TiC in various ratios were prepared by prolonged melting technique as well as by fusion in vacuo (10^{-4} mm Hg) of mixtures of TiC with Mo at 1850°-2000°C. The oxygen was removed from the samples by reduction with hydrogen at 1000°C. It was found that the Mo-TiC system is quasibinary and exhibits a eutectic type crystallization pattern. The eutectic temperature is $2175 \pm 15^\circ\text{C}$. The solubility of Mo in TiC at the eutectic temperature is 37 mol % and at 2000°C it is 25 mol %. The solubility of TiC in Mo at the eu-

Cord 1/2

L 31873-66

ACC NR: AT6013564

tectic temperature is within the 3.5-4.5 mol % range and at 2000°C it falls within the 2-2.5 mol % range. The temperature dependence of the thermodynamic activity (a_o) of carbon in TiC and Mo₂C is shown in figure 1. A phase diagram of the quasibinary Mo-TiC system is also given. Orig. art. has: 6 figures, 1 table.

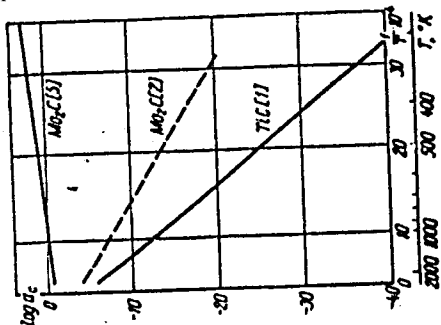


Fig. 1.

SUB CODE: 11,07/ SUBM DATE: 03Jul65/ ORIG REF: 003/ OTH REF: 003

Card 2/2 PB

YEREMENKO, V.N.; VELIKANOVA, T.Ya.

Crystallization type and composition of higher molybdenum
carbide. Porosh. met. 3 no.1:41-43 Ja '65. (MIRA 18:10)

1. Institut problem materialovedeniya AN UkrSSR.

VELIKANOVA, T.YA.

PHASE I BOOK EXPLOITATION SOV/3624
Akademiya nauk Ukrainy SSR. Institut metallofiziki i spetsial'nykh spivov

Metallorazresheniye materialov i metody ikh issledovaniya. Informatsionnyye materialy (Gosmet Material and Methods of Their Analysis: Information Material) Kiev, Izd-vo AN UkrSSR, 1959. 55 p. 1,500 copies printed.

Ed. of Publishing House: I.V. Meis; Tech. Ed.: A.M. Lisovets
Editorial Board: I.M. Prantsevich, I.M. Fedorchenko, G.S. Pisarenko, G.V. Samonov (Resp. Ed.), V.M. Yermolenko, and V.M. Federnko.

PURPOSE: This collection of articles is intended for scientific workers, designers, and engineering and technical workers in the metallurgical, machinery-manufacturing and other branches of industry.

COVERAGE: In this collection of articles the authors describe the production of carbides, nitrides and other heat resisting compounds, giving their physicochemical and mechanical properties. Their thermal processing and the processing installations are also described. A new method is proposed for the production of rods from refractory compounds. Certain compounds are analyzed, and the energy dissipation in materials during high-frequency mechanical vibrations is determined. No personalities are mentioned. There are 7 schematic drawings, 7 diagrams, 6 tables and 17 references, 16 of which are Soviet.

Fedorchenko, I.M., and Yu.N. Yermolov. Installation for Determining the Kinetics of Evaporation and the Vapor Tension of Metal Powders

Ku'menko, V.A. Method of Determining the Real Characteristics of Energy Dissipation in Materials During Vibrations 17

Yermolenko, V.M., and T.Ya. Velikanova. Installation for Heat Treatment of Specimens at High Temperatures 22

Yermolenko, V.M., and T.Ya. Velikanova. Conditions for Preparing Alloys of Titanium Carbide With Molybdenum 25

Klibus, A.Kh. Determination of Seal Quantities of Nitrogen in Titanium Carbide 27

Ostapenko, A.P. Device for Measuring the Thermoelectromotive Force of Semiconductor Materials at Room Temperature 30

Exler, I.A. Utilization of Lacquer Coatings to Investigate the Limiting State of Discs 32

Samonov, G.V. Physicochemical and Mechanical Properties of the Carbides and Nitrides of Boron and Silicon 36

Rus'menko, V.A. Calorimetric Method of Determining Energy Dissipation in a Material During High-Frequency Mechanical Vibrations 40

Verkhoglyadova, T.S. Preparation of Titanium Nitride From Titanium Sponge 45

Pen'kovskiy, V.V., and G.V. Samonov. Analysis of Vanadium Silicide Bars From High-Melting Compounds 46

Samonov, G.V., T.S. Verkhoglyadova, M.M. Antonov, and T.Y. Dubovik. Preparation of the Nitrides of High-Melting Metals 50

53/5

S/659/62/008/000/014/028
I048/I248

AUTHORS: Yeremenko, V.N., Tolmacheva, Z.I., and Velikanova, T.Ya.

TITLE: On the structure of titanium carbide alloys with nickel, chromium, and molybdenum

SOURCE: Akademiya nauk SSSR.. Institut metallurgii, Issledovaniya po zharoprochnym splavam. v.8. 1962. 95-102

TEXT: The systems Ti-C-Ni, Ti-C-Cr, and Ti-C-Mo were studied in an attempt to determine the true phase composition of cermets containing TiC with Ni, Cr, or Mo. The solubility of Ni in TiC at 1000-1280°C is 0.7% by wt.; TiC-Ni alloys containing over 0.7% Ni are composed of two phases, the microhardness of one of the phases being 3000 kg./sq.cm. The section TiC-Ni through the Ti-C-Ni system; as well as the TiC-Cr and TiC-Mo sections through the respective ternary systems, are quasibinary; the melting of alloys containing over 5% Ni starts at 1280-1300°C. In the system Ti-C-Cr, the formation of a new phase, $Cr_{23}C_6$, is observed when small amounts of TiC are added to Cr; the TiC-Cr alloy containing 20% Cr is composed of

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S/659/62/008/000/014/028
I048/I248

On the structure of titanium...

three phases whose microhardness (300, 1000, and 3000 kg.sq.cm.) corresponds to that of solid solutions based on Cr, chromium carbide, and TiC respectively. TiC-Cr alloys containing 52.85 and 63.0% Cr are composed of two phases - Cr-based and TiC-based solid solutions. All alloys in the system Ti-C-Mo are composed of two phases, with microhardnesses of 300 and 2400 kg./sq.cm.; x-ray data reveals that these are Mo-based and TiC-based solid solutions. The experimental data for this system disagrees with the data of Albert and Norton (Planseeberichte fur Pulvermetallurgie, 4, 2, 1956), according to which a Mo₂C-based solid solution exists in the system. There are 7 figures and 1 table.

Card 2/2

S/078/62/007/007/013/013
B119/B101

AUTHORS: Yeremenko, V. N., Velikanova, T. Ya.

TITLE: Investigation of the system tin - titanium within the range rich in tin

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 7, 1962, 1750 - 1752

TEXT: The structure of Sn - Ti alloys containing 0 - 34.6 % by weight of Ti was studied. Results: Ti in concentrations of 0.008 - 20 % by weight in the alloy lowers the crystallization point of Sn (232°C) by 1 - 2°C. All alloys containing 0.008 - 18.98 % Ti show two phases only. Crystals in the intermetallic phase are evenly distributed through the mass of tin. The solubility of Ti in Sn in the solid state is 0.006 - 0.008 % Ti. In Sn - Ti alloys with 8.3 - 34.6 % Ti a nonvariant conversion occurs at ~790°C, the nature of which is not yet clarified. There are 1 figure and 2 tables.

SUBMITTED: November 1, 1961

Card 1/1

15.2240

33798
S/137/62/000/001/043/237
A060/A101

AUTHORS: Yeremenko, V. N., Velikanova, T. Ya.

TITLE: On triangulating the system titanium-carbon-molybdenum

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 36, abstract 10265
("Poroshk. metallurgiya", 1961, no. 3, 20 - 24 [English summary])

TEXT: An analysis of the thermodynamical data on the carbides of Mo and Ti has made it possible to assume that the system Ti-C-Mo should be susceptible to triangulation along the sections TiC-Mo, TiC-Mo₂C, TiC-MoC. The experimental verification of this assumption was carried out upon the alloys of these binary systems, prepared by pressing the mixtures and sintering at 1,850°C for 5 hours. X-ray structure, durometric, and metallographic analyses have uncovered in the sintered alloys the presence of only two phases: Mo and TiC. A conclusion is drawn as to the pseudobinary eutectic nature of the Mo-TiC system and the results of investigations of the Mo-Ti-C diagram by other authors are discussed.

R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 1/1

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320003-0

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320003-0"

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320003-0

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320003-0"

VELIKANOVA, V.I.

Penicillin in appendiceal peritonitis. Sovet. med. No.1:5-6 Jan 52.
(CINL 21:4)

1. Of the Surgical Division (Head--Honored Physician RSFSR V.A. Krushkov), Children's Hospital imeni I.V. Rusakov.

VELIKANOVA, V. I.

Penicillin in appendiceal peritonitis., Sov. med., No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1952 ~~1953~~, Uncl.

ACC NR: AT6012363

SOURCE CODE: UR/0000/65/000/000/0011/0019

AUTHORS: Yoremenco, V. N.; Velikanova, T. Ya.; Shabanova, S. V.

ORG: none

TITLE: Structure of certain alloys of the ternary system Ti--Mo--C

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 11-19

TOPIC TAGS: titanium, molybdenum, carbon, alloy phase diagram, hardness, lattice parameter

ABSTRACT: The phase relationships of the subsystems $\text{Mo}_2\text{C} - \text{TiC}$, and $\text{Mo}_3\text{C}_2 - \text{TiC}$ of the system Ti--Mo--C were studied. The study was carried out by means of microstructural and x-ray analysis. The experimental results are summarized in graphs and tables (see Figs. 1 and 2). The lattice parameters and hardness of the phases occurring in the system were determined. Above 2000°C, the higher carbide of molybdenum and titanium carbide form a continuous series of solid solutions.

Card 1/2

L 39780-56
ACC NR: AT6012363

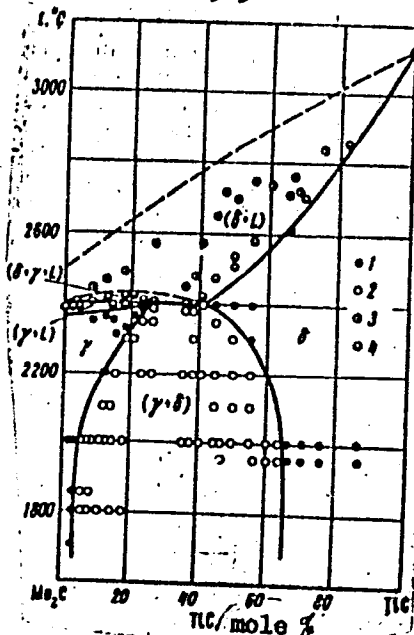


Fig. 1. Polythermic section $\text{Mo}_2\text{C} - \text{TiC}$. 1 - single-phase alloys γ or δ ; 2 - two-phase alloys ($\gamma + \delta$); 3 - temperatures at which the specimens are in the solid-liquid state; 4 - temperature of solidus (obtained after the method of Al'tertum-Pirani).

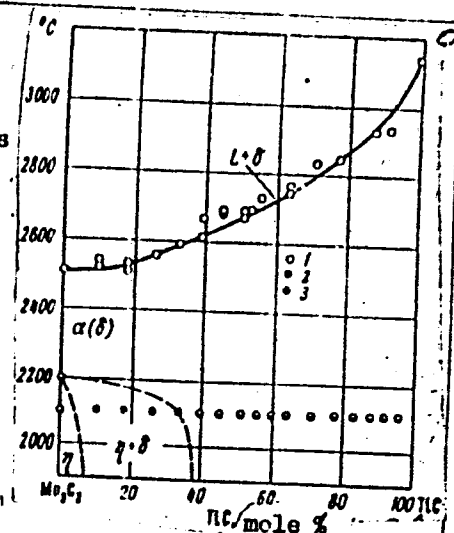


Fig. 2. Polythermic section $\text{Mo}_3\text{C}_2 - \text{TiC}$ (according to preliminary data). 1 - data of thermal analysis; 2 - single-phase alloys; 3 - two-phase alloys.

Orig. art. has: 5 tables and 10 figures.

SUB CODE: 11/
Card 2/2228

SUBM DATE: 02Dec65/

ORIG REF: 003/ OTH REF: 005

VELIKANOVA, V. I.

Appendicitis

Penicillin in appendiceal peritonitis. Sov.med. No. 1, 1952

Monthly List of Russian Accessions, Library of Congress, May 1952, UNCLASSIFIED.

VELIKANOVA, V. I.

Peritonitis

Penicillin in appendiceal peritonitis., Sov. med., no. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1952, 2 Unclassified.

SEMENOVA, M.N.; VELIKANOVA, V.I.

Antibiotic substances from the culture liquid of the "tea fungus"
Medusomyces Gisewii. Dokl. AN SSSR 141 no.2:498-499 N 61.

(MIRA 14:11)

1. Predstavleno akademikom A.L.Kursanovym.
(ANTIBIOTICS) (MYCODERMA)

CIA-RDP86-00513R001859320003-0

JUL 1963 / JULY 1963 / JULY 1963 / JULY 1963 / JULY 1963

The first system of musical notation for 'The Rose Tree'. It consists of a single line of music with a treble clef and a key signature of one flat (B-flat). The melody is written in a simple, folk-like style with eighth and sixteenth notes. Below the staff, there are several small, stylized musical symbols or ornaments.

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APPROVED FOR RELEASE: 09/01/2001

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at temperatures are required, aluminum suspension is preferred.
fore preferable. Original and

VIDRO, L.I.; GORELOVA, M.N.; VELIKANOVA, Ye.I.

Satisfactory conditions for the primary annealing of glass parts.
Stek. 1 ker. 13 no.10:10-12 0 '56. (MLRA 9:12)
(Glass manufacture)

VELIKANOVA, Ye.V.

Experimental production of fertile hybrids of two species of strawberries (*Fragaria ananassa* Duch. x *F. moschata* Duch. Bot. zhur. 42 no.1:102-106 Ja '57. (MLRA 10:2)

1. Plodovo-yagodnaya opytnaya stantsiya, g. Rossosh' Voronezhskoy oblasti.

(Strawberry breeding)

VELIKANOVA, Z.M.; YARNYKH, N.A.

Laboratory studies of the velocity field of a horizontal stream
in a sand-wave structure of the bottom. Trudy GGI no. 120:31-36
'65. (MIRA 19:1)

L 18959-66
ACC NR: AT6016518 (N) SOURCE CODE: UR/3186/65/000/120/0031/0036

AUTHOR: Velikanova, Z. M.; Yarnykh, N. A.

2
B+1

ORG: none

TITLE: Laboratory investigation of the velocity field of a plane flow in the presence of a ridge structure on the bottom

SOURCE: Leningrad. Gosudarstvennyy gidrologicheskiy institut. Trudy, no. 120, 1965. Issledovaniya ruslovykh protsessov, 31-36

TOPIC TAGS: plane flow, vortex flow, flow velocity, velocity distribution, flow kinetics ,
HYDROLOGY

ABSTRACT: The authors present experimental data obtained from a study of the instantaneous and average velocity field above a two-dimensional sand ridge in a flow with distinctly separated circulation and transitional zones. The experiments were carried out at the Channel Laboratory of GEB GGI (Ruslovaya laboratoriya GEB GGI) in 1961. The glazed flume used in the experiments was 7 cm wide and 5 m long; the diameter of the sand particles varied from 0.1 to 0.25 mm, averaging 0.18 mm. Before the start of the experiment the sand was laid parallel to the bottom, then the bottom of the flume was inclined ($i = 0.001$). The flume was filled with water, after which the same inclination of the free surface was

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ACC NR: AT6016518

achieved by gradually increasing the flow rate of the water. In this case the flow rate was 1.7 liter/sec. The ridges that formed in the flume had a height of $\Delta = 3$ cm, length $\lambda = 30$ cm at a flow depth of the crest of the ridges $H = 6$ cm. The lines of the crests of the ridges were perpendicular to the axis of the flume, thus demonstrating that the movement was two-dimensional. The ridges moved along the flume, keeping their height and length constant. High-speed photography was used to obtain the velocity field in the flow. The velocity field in the flow was recorded in a section completely encompassing one ridge at a frequency of 240 frame/sec. An examination of flow velocity distribution showed that the horizontal component of velocity at the boundaries of the transition of the flow did not substantially change over the greater part of the vertical. This velocity distribution differs from that usually observed in natural flows and can apparently be explained by the fact of the side walls of the flume. A stable circulation zone was observed at the trough of the ridge, within which the velocities markedly differed in magnitude and direction. In the lower part of the circulation zone velocities counter to the direction of the main transitional flow were observed. The velocities within the circulation zone are represented by lines of the current which divide the volume of water included within the circulation zone into streams having an equal flow rate. The data obtained broaden current concepts concerning the structure of a flow in the presence of two-dimensional sand ridges on the bottom. A ratio of the length of the vortex zone to the height of the ridge equal to 5Δ seems sufficiently reliable. The distribution to the bottom velocities within the vortex zone and the upward slope of the ridge that was obtained also

Card 2/3

L 38959-66

ACC NR: AT6016518

seems sufficiently reliable. The pattern of the distribution of velocities within the vortex zone that was obtained is of definite interest since this pattern had been little studied in the past. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 00/

Card 3/3 *10*

VELIKAYA, N.N.

New data on the manifestation of Mesozoic igneous activity in central
Kazakhstan. Trudy VSEGEI 111:123-126 '64.
(MIRA 18.7)

VELIKAYA, M.N.

Prospecting significance of purified zones of polymetallic deposits
in central Kazakhstan. Inform.sbor. VSEGEI no.3:93-95 '56.

(Kazakhstan--Ore deposits)

(MIRA 10:1)

VELIKAYA, N.N.

Relationship between dike rocks and complex ores in the Kyzyl-Espe ore deposit (central Kazakhstan). Sov.geol. 2 no.12: 64-70 D '59.
(MIRA 13:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut. (Kyzyl-Espe region (Kazakhstan)---Ore deposits)

VELIKAYA, N.N.

Age of some intrusive complexes in central Kazakhstan based on
data of the argon method. Inform.sbor. VSEGEI no.54:63-67 '62.
(MIRA 17:1)

VELIKAYA, N.N.

Small intrusions of the Ahzhal--Ak-Sor fault zone.
Trudy VSEGEI 74:115-130 '62. (MIRA 15:9)
(Kazakhstan--Rocks, Igneous)

YANKOVSKAYA-SIZENKO, Tat'yana Sergeyevna; VELIKAYA, N.P., red.

[New ways in the treatment of malignant tumors] Novye
puti v lechenii zlokachestvennykh novooobrazovaniy.
Kiev, Naukova dumka, 1964. 70 p. (MIRA 18:1)

VELIKAYA, R.R. [Velyka, R.R.]

Leading off electric potentials from different parts of the myocardium of a frog by the use of intracellular microelectrodes. Fiziol. zhur. [Ukr.] 7 no.4:499-502 J1-Ag '61. (MIRA 14:7)

1. Laboratory of General Physiology of the A.A.Bogomol'tz Institute of Physiology of the Academy of Sciences of the Ukrainian S.S.R., Kiev.

(ELECTROCARDIOGRAPHY)

VELIKAYA, Ye. I.

USSR/Chemical Technology - Chemical Products and Their Application. Fermentation Industry, I-27

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63559

Author: Mal'tsev, P. M., Zazirnaya, M. V., Velikaya, Ye. I., Vyal'ko, Ye. F.

Institution: None

Title: Effects of Separation on Qualitative Composition of Beer Wort

Original

Periodical: Tr. Kievsk. tekhnol. in-ta pishchevoy prom-sti, 1953, No 13, 101-105

Abstract: Studies of qualitative changes in turbid beer wort on 5-minute centrifugation in laboratory precipitation centrifuge at 2,000 RPM. The indexes thus obtained are compared with those of clear wort (CW) collected from outlet of filter-press after filtration of turbid liquor that was concurrently subjected to separation. Residue of insolubles in CW was the same within 0.01-0.03 g/100 ml. Turbidity of separated CW is almost 2 times less due to more complete removal of colloids both prior to and after hop treatment of the wort. Color and pH of CW are the same. Protein content and dextrin content of CW are practically the same.

Card 1/1

VELIKAYA, Ye.I.; MAL'TSEV, P.M.

Effect of fine turbidity of beer wort on the viability of yeasts
[with summary in English]. Mikrobiologiya 26 no.5:597-601 S-O '57.
(MIRA 10:12)

1. Kiyevskiy tekhnologicheskii institut pishchevoy promyshlennosti
im. A.I. Mikoyana.
(YEAST) (WORT)

VELIKAYA, Ye.I.; MAL'TSEV, P.M.

Characteristics of brewer's yeast used in the fermenting of
wort with a thin froth. Trudy KTIPP no.17:21-26 '57.

(Yeast) (Brewing)

(MIRA 13:1)

VELIKAYA, Ye. I.

VELIKAYA, Ye. I., Cand Tech Sci -- (diss) "Clarification of the
brewing wort in sedimentation apparatus and ^{the effect} influence of its
suspensions upon the process of fermentation." Kiev, 1957.

16 pp (Min of Higher Education Ukr SSR, Kiev Technological
Inst of Food Industry im A. I. Mikoyan), 150 copies (KL, 1-58,
117)

- 45 -

VELIKAYA, Ye.I.; MAL'TSEV, P.M.

Effect of the methods of the processing of kieselguhr from the
Kirovograd deposit on its chemical composition. Trudy KTIPP
no.24:156-158 '61. (MIRA 1:6)
(Kirovograd Province--Diatomaceous earth)

MAL'TSEV, P.M.; VELIKAYA, Ye.I.

Scientific work of the Department of the Technology of Fermentation
Products of the Kiev Technological Institute of Food Industry.

Trudy KTIPP no.24:181-190 '61. (MIRA 15:6)
(Kiev--Food industry)

VELIKAYA, Yelizaveta Ivanovna; SUKHODOL, Viktoriya Fominichna;
TOMASHEVICH, Vladimir Konstantinovich; SMIRNOV, V.A.,
prof., retsenzent; MALCHENKO, A.L., prof., retsenzent;
FERTMAN, G.I., prof., retsenzent; VOYKOVA, A.A., red.

[General methods of control in fermentation industries]
Obshchie metody kontrolya bродil'nykh proizvodstv. Mo-
skva, Pishchevaia promyshlennost', 1964. 273 p.
(MIRA 17:9)

SUKHODOL, V.F.; VELIKAYA, Ye.I.

Thirtieth Conference of the Kiev Technological Institute of
the Food Industry. Form. 1 spirt.prom. 30 no.4:43-45 '64.
(MDA 18:12)

SHVETS, V.N., inzh.; MAL'TSEV, P.M., doktor tekhn. nauk;
VELIKAYA, Ye.I., kand. tekhn. nauk

Selecting the method and optimum conditions of the accumulation of melanoid reaction components in pale barley malt.
Pishch. prom. no.1:74-79 '65. (MIRA 18:11)

SHVETS, V.N., inzh.; MAL'TSEV, P.M., doktor tekhn. nauk;
VELIKAYA, Ye.I., kand. tekhn. nauk

Preparation of coloring malt from dry and green malts. Piskun.
prom. no.2:83-86 '65. (MIRA 18:11)

1. Kiyevskiy tekhnologicheskii institut pishchevoy promyshlennosti.

VELIKEVICH, I,

How to form an association for the communal cultivation of land Izd. 3. Moskva Knigosoiuz, 1929. 110 p.

Cyr. 4 HD460

1. VELIKEVICH, I., LYUBAVSKIY, A.
2. USSR (600)
4. State Farms
7. Book on state farms ("State Farms." M. A. Abrosimov, ed. Reviewed by I. Velikevich, A. Lyubavskiy). Sov. Zootekh., 7, No. 4, 1952.
9. Monthly List of Russian Accessions, Library of Congress, June 1952.
Unclassified.

VFLIKHISH, Iosif Danilovich, jt. au.

Land rent relations in the Soviet village. Moskva, Gos. izd-vo, 1928. 204 p. (Ekonomi-cheskaia biblioteka) (52-52117)

HD1339.R9A9

VELIKEVICH, Iosif Danilovich.

Leases of land in the Soviet village. Pod redaktsiei i s predislovien IA. A. IAKovleva.
Moskva, Gos. izd-vo, 1928. 204 p. (Ekonomicheskaja biblioteka) At head of title: A.
Azizian i I. Velikevich.

VELIKEVICH, I. D.

Vysokie urozhai zernovykh kul'tur v sovkhozakh (High yields from grain crops on state farms) Moskva, Sel'khozgiz, 1953. 200 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 6, Sep. 1954

VELIKEVICH, I. D.

I. D. Velikevich, Vysokoiye urozhay zernovy'm kul'tur v sovkhovakh (High-Yield Grain Crops in Sovkhovs), Sel'khozgiz, 16 sheets.

The booklet generalizes advanced experience in obtaining high-yield grain crops in leading sovkhovs.

The booklet is intended for supervisory workers of agriculture, and for agronomists of sovkhovs and machine-tractor stations.

SO: U-6472, 18 Nov 1954

VELIKHANLY, I. I.

Velikhanly, I. I.

"Methods of Assigning and Checking Homework in the Fifth through Seventh Classes of Intermediate School." Azerbaydzhan State Pedagogical Inst imeni V. I. Lenin. Baku, 1955. (Dissertation for the Degree of Candidate in Pedagogical Science)

So: Knizhnaya letopis', No. 27, 2 July 1955

MURASHKO, Mikhail Grigor'yevich; GATILLI, Pavel Dmitriyevich;
VELIKEVICH, Pavel Adamovich; VOYTEKHOVSKAYA, Emiliya
Aleksandrovna; ZOLOTAREV, T.L., prof., red.; BARABANOVA, Ye.,
red. izd-va; SIDERKO, N., tekhn. red.

[Cadastral survey of water-power resources of the White Russian S.S.R.; potential hydroelectric power resources]Vodno-energeticheskii kadastr Belurusskoi SSR; potentsial'nye gidro-energoresursy. Minsk, Izd-vo Akad. nauk BSSR. Vol.2. [Album of cadastral graphs]Al'bom kadaastrovykh grafikov. Pod red. T.L.Zolotareva. 1962. 217 p. (MIRA 16:1)
(White Russia—Hydroelectric power)

MURASHKO, Mikhail Grigor'yevich; GATILLO, Pavel Dmitriyevich; VELIKEVICH, Pavel Adamovich; VOYTEKHOVSKAYA, Emma Aleksandrovna; BLIZNYAK, Ye.V., prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki [deceased]; ZOLOTAREV, T.L., prof., doktor tekhn.nauk, red.; MARINS, L., red.izd-va; VOLOKHANOVICH, I., tekhn.red.

[Cadastral survey of water-power resources of the White Russian S.S.R.; potential hydroelectric power resources] Vodnoenergeticheskiy kadastr Belorusskoi SSR; potentsial'nye gidroenergoresursy. Pod red. T.L.Zolotareva. Minsk, Izd-vo Akad.nauk BSSR. Vol.1. 1960. 281 p. ____ Maps. (MIRA 13:10)
(White Russia--Hydroelectric power)

VELIKHOV

USSR/Engineering
Bibliography

Aug 48

"New Books" $\frac{1}{2}$ p

"Mekh Trud i Tyazh Rabot" No 8

Three good books have been published in 1948: Vlasov's "Saw Production," Skiba's "Mechanization of Wagon Repair Work," and Velikhov's "Erection of Metallic Constructions." Books have been recommended as texts for higher technical schools.

PA 29/49T30

STAMBOLIEV, Hristo, vanredni profesor (Skopje); VELIKOV, Dimitar, asistent

Cellular anhydrite. Tehnika Jug 19 no.6: Suppl: Gradevinarstvo
18 no.6:1034-1038 Jo '64.

1. Faculty of Engineering, University of Skopje, Skopje.

VELIKHOV, L. A.

Fundamentals of municipal government: general theory of municipal administration, finance and methods of government Moskva, Gos. izd-vo, 1928. 467 p.

Yudin HJ9109.V4

VELIKHOV, P. P.

Assembling steel structures i arkhitekture, 1954. 213 p. izd. 2., perer. Moskva, Gos. izd-vo lit-ry po stroit.

1. Building, Iron and steel

PHASE I BOOK EXPLOITATION

SOV/3762

VELIKHOV, Y.E.P.
P.4,9

Konferentsiya po magnitnoy gidrodinamike. Riga, 1958.

Voprosy magnitnoy gidrodinamiki i dinamiki plazmy; trudy Konferentsii.
(Problems in Magnetohydrodynamics and Plasma Dynamics; Transactions of a
Conference) Riga, Izd-vo AN Latvyskoy SSR, 1959. 343 p.
Errata slip inserted. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Latvyskoy SSR. Institut fiziki.

Editorial Board: D.A. Frank-Kamenetskiy, Doctor of Physics and Mathematics,
Professor; A.I. Vol'dek, Doctor of Technical Sciences, Professor; I.M. Kirko,
Doctor of Physics and Mathematics; V.Ya. Veldre, Candidate of Physics and
Mathematics; V.G. Vitol, Candidate of Physics and Mathematics; Yu.M. Krumin';
and V.Ya. Kravchenko.

Ed.: A. Teytshl'baum; Tech. Ed.: A. Klyavinya

PURPOSE: This book is intended for physicists working in the field of magneto-
hydrodynamics and plasma dynamics.

Card 1/12

807/3762

Problems in Magnetohydrodynamics (Cont.)

COVERAGE: This volume contains the transactions of a conference held in Riga, June 1958, on problems in applied and theoretical magnetohydrodynamics. The objects of the conference were the investigation of the basic trends in theoretical and applied magnetohydrodynamics, establishing contact between the people doing research in different branches of magnetohydrodynamics, and promoting the participation of theoretical physicists in problems in applied magnetohydrodynamics. More than 160 persons from different parts of the Soviet Union took part in the conference, and 55 papers were read. Similar conferences are to be held regularly in the future; the next such conference is scheduled to be held in Riga in June 1960. In this present collection of the transactions of the conference, most of the papers and comments on papers are presented by the authors themselves in an abridged form. The book is divided into two parts: the first part deals with problems in theoretical magnetohydrodynamics and plasma dynamics, and consists of 35 articles on such aspects of the problem as the application of magnetohydrodynamics in astrophysics (D.A. Frank-Kamenetskiy), magnetohydrodynamics and the investigation of cosmic-ray variations (L.I. Dorman), acceleration of plasma in a magnetic field (G.V. Gordeyev and A.I. Gubanov), stability of shock waves and magnetohydrodynamics (A.I. Akhiezer). The second part, consisting of 33 articles, deals with problems of experimental magnetohydrodynamics, including the application of physical simulation for investigation of electromagnetic processes in liquid metals (I.M. Kirko) and the development of electromagnetic pumps (P.G. Kirillov), at the Institute of Physics of the

Card 2/12

80V/3762

Problems in Magnetohydrodynamics (Cont)

Academy of Sciences, Latvian SSR. Several articles are devoted to induction pumps, electromagnetic crucibles, electromagnetic stirrers for molten metals, and their application in the metallurgical industry including schematic diagrams of their power-supply systems. References are given at the end of most of the articles.

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AVAILABLE: Library of Congress

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21(7)

SOV/56-36-4-34/70

AUTHOR:

Velikhov, Ye. P.

TITLE:

The Stability of a Plane Poiseuille Flow of an Ideally Conducting Fluid in a Longitudinal Magnetic Field (Ustoychivost' ploskogo Puzeyleva techeniya ideal'no provodyashchey zhidkosti v prodol'nom magnitnom pole)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 35, Nr 4, pp 1192-1202 (USSR)

ABSTRACT:

The author investigated the necessary and sufficient conditions for the stability of the flow of an ideally conducting incompressible fluid in a longitudinal magnetic field with respect to minor perturbations. The asymptotic method according to Heisenberg and Lin is used, the applicability of which has already been proved. The rather detailed paper at first deals with the posing of the problem. The magnetohydrodynamic basic equations are set up and it is shown in what way the problem can be reduced to the finding of eigenvalues of the solution of a not self-adjoint differential equation (2.4) with given boundary conditions. In the following, the stability conditions are investigated and it is found that the condition

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$A^2 > 1$ is sufficient. ($A = B_c / V_c \sqrt{4\pi c}$, A - the Alfvén number).

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V_c = the characteristic velocity, B_c = the characteristic magnetic induction, and ρ = density). The next paragraph investigates the asymptotic method of solving the problem for $R_m \gg 1$ ($R_m = V_c L \lambda$, R_m = the magnetic Reynold number, L = the characteristic dimension of flow, $\lambda = c^2 / 4\pi\sigma$, σ = conductivity, which is always the case with fluids of good conductivity. The next paragraph deals with the stability of a plane flow at $R_m = \infty$. Among others, expressions are derived for A_{crit} and R_E (the hydrodynamic Reynold number, $R_E = V_c L / \nu$, ν = kinetic viscosity). It holds that $R_E^{crit} \sim \frac{const}{(A_{crit} - A)^5}$. Finally the stability of Poiseuille flow is investigated by the numerical method for a parabolic velocity profile. For $A = 0.08$ and $kR_m = \infty, 10^8, 10^7, 2 \cdot 10^6$ the values obtained are tabulated and two diagrams show the neutral curve for $kR_m = \infty$ (Fig 3) and the connection of R_E^{crit} and the wave number of the critical

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perturbations of A (Fig 4). The values of the latter are given by table 4. For the stability of a plane flow with arbitrary profile in an ideally conducting fluid with respect to infinitely small perturbations it holds that $A > 1$, i.e. $B_c^2/8\pi \geq \rho V_c^2/2$. The critical value of the magnetic field which stabilizes flow is $0.1 \cdot V_0 \sqrt{4\pi\rho}$; V_0 is the velocity in the center of the channel. The author finally thanks S. I. Braginskiy for raising the problem and for his advice, and D. A. Frank-Kamenetskiy for discussions. There are 4 figures, 4 tables, and 8 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: October 9, 1958

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24(3), 21(7)

SOV/56-36-5-14/76

AUTHOR:

Velikhov, Ye. P.

TITLE:

The Stability of Flow of an Ideally Conductive Liquid Between Rotating Cylinders in a Magnetic Field
(Ustoychivost' techeniya ideal'no provodyashchey zhidkosti
mezhdru vrashchayushchimisya tsilindrami v magnitnom pole)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 5, pp 1398-1404 (USSR)

ABSTRACT:

In a number of papers by Western authors (Refs 1 - 4) the flow stability of a viscous incompressible liquid between rotating cylinders has already been investigated. The classical (Rayleigh) stability condition is $\Omega_1 R_1^2 \Omega_2 R_2^2$ (cf. Landau and Lifshits, reference 5) and follows from the conservation of the angular momentum of the particles of the liquid (Ω_1 denotes the angular velocities, R_1 the cylinder radii). The author of the present paper investigates the stability of the flow of an ideally conductive non-viscous liquid located in a magnetic field for the

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present considered to be axial. (For the case of a viscous liquid having a low degree of conductivity, the same problem has already been solved - (see reference 6)). In these investigations the influence exercised by viscosity upon the perturbations of the steady flow are neglected, and only the so-called "linear" stability of the flow is investigated, i. e. the stability with respect to perturbations with infinitely small amplitudes. First, the sufficient conditions for stability are investigated for an axial- and then for a toroidal field, and the critical values for the magnetic fields stabilizing flow are given. The stabilizing influence exercised by the field is found to be the greater, the more rapidly the latter decreases in the direction towards the periphery. If the equilibrium field increases proportionally to r , the transport of the tubes of force does not influence the formation of an instability. If the field decreases towards the outside or if it grows at a rate that is slower than proportional to r , the energy of the perturbations goes over into energy of the magnetic field in the case of radial circulation. The author

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thanks S. I. Braginskiy for raising the problem and for
valuable advice. There are 1 figure and 9 references, 4
of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State
University)

SUBMITTED: October 9, 1958

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S/057/61/031/002/004/015
B020/B067

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AUTHOR: Velikhov, Ye. P.

TITLE: Stability of the plasma - vacuum boundary

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 2, 1961, 180-187

TEXT: As is known the boundary of a magnetically trapped plasma is unstable toward spouted disturbances because these disturbances do not increase the density of magnetic energy. This is due to their capability of reducing the potential energy of plasma without distorting the magnetic lines of force. To stabilize the plasma, the ends of the lines of force are frozen into ideally conductive plates. In this case, any distortion of the plasma boundary increases the energy of the magnetic field. This stabilizing effect is studied with the simplest model of a plane, homogeneous plasma layer with the density ρ , with a magnetic field \vec{B} which counteracts the force $\vec{f} \times \vec{g}$ by means of an outer magnetic field \vec{H} . In practice, this effect would be bound to occur in mirror traps where the centrifugal force of the particle motion along the distorted lines of force causes instability. The magnetic lines of force can be frozen in by means of

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conductive plates at the front of the system. Such an effect occurs in the trap formed by the magnetic field of the Earth, with the ionosphere acting as the plate. It should be added that in an ideal system without zero-pressure plasma between the hot plasma and the wall, this effect does not occur. The author qualitatively studies the stability. He discusses the stability of plasma with a blurred boundary by a general example and, finally, the stability of the exponential transition layer. The following conclusions were drawn: If the ends of the lines of force are fixed, i.e., the plasma at the conductive walls contacts points at a certain distance from $2L_2$, the condition for a stable plasma boundary is

$$\pi B^2 / 16 L_1 L_2 S_0 > g/l,$$

where g is the acceleration of the force separating the charges, and $2L_1$ the width of the dense plasma section. If the instability is related to the effect of centrifugal force,

$$g \sim v_{||}^2 / R_0$$

where $v_{||}^2$ is the particle velocity along the lines of force, and R_0 the

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radius of curvature of the lines of force. Then

$$\pi B_0^2 / 16 L_1 L_2 \varphi_0 > v_{||}^2 / l R_0 \sim T / M l R_0,$$

i.e., the stability condition reads

$$\beta = 8 \pi p / B_0^2 < (\pi^2 / 2) \cdot (l R_0 / L_1 L_2),$$

which holds only if $\beta \gg 1$. The author thanks A. A. Vedenov for raising the topic and discussing the main problems. There are 2 Soviet-bloc references.

SUBMITTED: May 14, 1960

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S/053/61/073/004/006/007
B125/B201

24.2120 also 3617, 3817

AUTHORS: Vedenov, A. A., Velikhov, Ye. P., Sagdeev, R. Z.

TITLE: The stability of plasma

PERIODICAL: Uspekhi fizicheskikh nauk, v. 73, no. 4, 1961, 701-766

TEXT: The authors of the present paper report on the basic physical results of the theory of stability, and illustrate the subject by physical considerations, without making an analysis of the mathematical means. The problem of the stability has been practically studied to some completeness only where small disturbances are concerned. The linear theory does not, in principle, distinguish between metastable and stable conditions, and is therefore unsuited in the case where a steady state is separated by a barrier from another one. This problem already leads to the nonlinear theory of stability. With the exception of some special cases, there is as yet no nonlinear theory of stability. The "supercritical" theory of stability, which has been successfully developed in the recent past, deals with the effect of perturbations on an average background, and the development of small perturbations on this background. This method

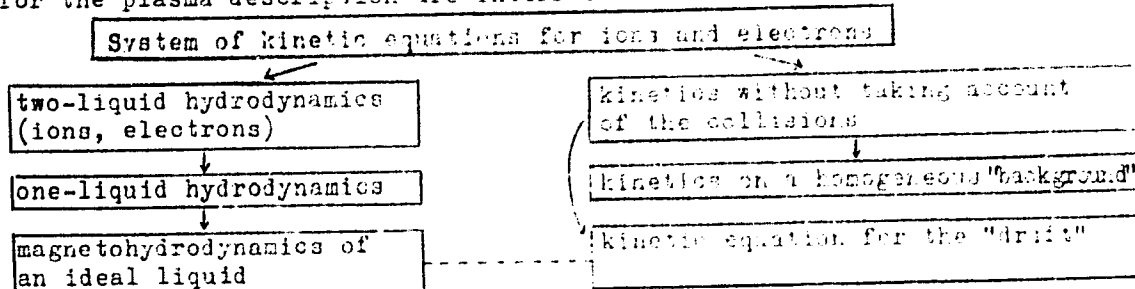
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is suitable if the critical conditions of stability are exceeded to a slight extent. Of some significance in terms of physics are (1) the aperiodic instability, where the deviation from the position of equilibrium increases monotonically in the progress of time; (2) oscillations with growing amplitude. The mathematical conditions for the aperiodicity or for an oscillation instability read: $\text{Re } \omega = 0$ and $\text{Re } \omega > 0$, respectively. [Abstracter's note: because of the length of the paper, only its articulation and the principal equations can be given here.] The methods for the plasma description are interrelated as follows:



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The system of equations of ideal magnetohydrodynamics for an ideal plasma (zero dissipation and vanishing dissipation) reads:

$$\frac{\partial \rho}{\partial t} + \operatorname{div} \rho \mathbf{v} = 0, \quad (3.1)$$

$$\frac{\partial \mathbf{v}}{\partial t} + (\mathbf{v}, \nabla) \mathbf{v} = -\frac{1}{\rho} \nabla p + \frac{1}{4\pi \rho c} [\operatorname{rot} \mathbf{H}, \mathbf{H}], \quad (3.2)$$

$$\frac{\partial \mathbf{H}}{\partial t} = \operatorname{rot} [\mathbf{v}, \mathbf{H}], \quad (3.3)$$

$$p = p(\rho). \quad (3.4)$$

When considering dissipative effects, the term $\eta \Delta \vec{v} + \left(\frac{\eta}{3} + \xi\right) \operatorname{grad} \operatorname{div} \vec{v}$ appears additionally on the right-hand side of (3.2), where η and ξ denote the viscosity coefficients. In addition, $\frac{c^2}{4\pi \sigma} \Delta \vec{H}$ appears on the right-hand side of (3.3). The place of (3.4) is taken by the two equations $p = p(\rho, T)$ and

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